

conquer network, $n > 3$; and (b) generating a recursive bit-permuting 2-stage interconnection network, excluding the recursive plain 2-stage interconnection network, associated with the n -leaf balanced binary tree.

Broadly, in accordance with a system aspect of the present invention, a $2^n \times 2^n$ generalized divide-and-conquer network, $n > 3$, includes: (a) $2^{\lfloor n/2 \rfloor} \times 2^{\lceil n/2 \rceil} \times 2^{\lceil n/2 \rceil}$ input nodes, each of the $2^{\lfloor n/2 \rfloor}$ input nodes being a $2^{\lceil n/2 \rceil} \times 2^{\lceil n/2 \rceil}$ generalized divide-and-conquer network; (b) $2^{\lceil n/2 \rceil} \times 2^{\lfloor n/2 \rfloor} \times 2^{\lfloor n/2 \rfloor}$ output nodes, each of the $2^{\lceil n/2 \rceil}$ output nodes being a $2^{\lfloor n/2 \rfloor} \times 2^{\lfloor n/2 \rfloor}$ generalized divide-and-conquer network; and (c) an interstage exchange connecting the input nodes to the output nodes, wherein the interstage exchange is a bit-permuting exchange induced by a permutation σ on integers from 1 to n such that σ maps the numbers $\lfloor n/2 \rfloor + 1, \lfloor n/2 \rfloor + 2, \dots, n$, into the set $\{1, 2, \dots, \lceil n/2 \rceil\}$ excluding the bit-permuting exchange equal to the $\lfloor n/2 \rfloor^{\text{th}}$ power of $\text{SHUF}^{(n)}$, and wherein each $2^k \times 2^k$ generalized divide-and-conquer network ($k < n$), being representative of each of the input nodes and each of the output nodes, is implemented by forming the bit-permuting 2-stage tensor product, excluding the plain 2-stage tensor product, between a $2^{\lceil k/2 \rceil} \times 2^{\lceil k/2 \rceil}$ generalized divide-and-conquer network and a $2^{\lfloor k/2 \rfloor} \times 2^{\lfloor k/2 \rfloor}$ generalized divide-and-conquer network, recursively until $k=1$, such that a 2×2 generalized divide-and-conquer network is a single cell.--

Please replace lines 1-3 on page 13 as follows: --

FIG. 21B depicts a (1 2 3) permutation on an 8×8 exchange;

FIG. 21C depicts a (3 1) permutation on an 8×8 exchange;